Duct Free Systems
Cooling Only and Heat Pump High Wall Units
Accessory Condensate Pump

Cancels: IIK 619E-09-3 IIK 619E-09-4
11/1/03

Installation Instructions

Part Number: 53DS-900---062 (115 v)
Part Number: 53DS-900---064 (230 v)
Part Number: 53DS-900---084 (230 v)

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GENERAL

NOTE: Read and become familiar with these instructions before beginning installation.

Use the two-part accessory kit (condensate pump and detection unit) with high wall fan coil units listed in Table 1. Refer to Table 2 for a list of parts included in this kit. See Fig. 1 for reference.

The condensate pump provides a 6-ft maximum suction lift of condensate and an 18-ft lift after the pump in situations where space and construction prevent gravity drainage.

A float switch in the detection unit prevents overflow and can also act as a safety device by shutting down the system. The detection unit comes with normally closed (NC) alarm contacts (user optional, but recommended).

The normally closed (NC) alarm contact is a dry contact rated for 8 amps at 250 volts. In the event of a problem such as a clogged filter or pump discharge line, the alarm contact can be wired to shut down the entire system.

The pump operates whenever the condensate level in the detection unit is high enough to cause the magnetic float switch to send a signal to start the pump.

⚠ CAUTION

Failure to follow instructions properly may result in unit failure and damage.

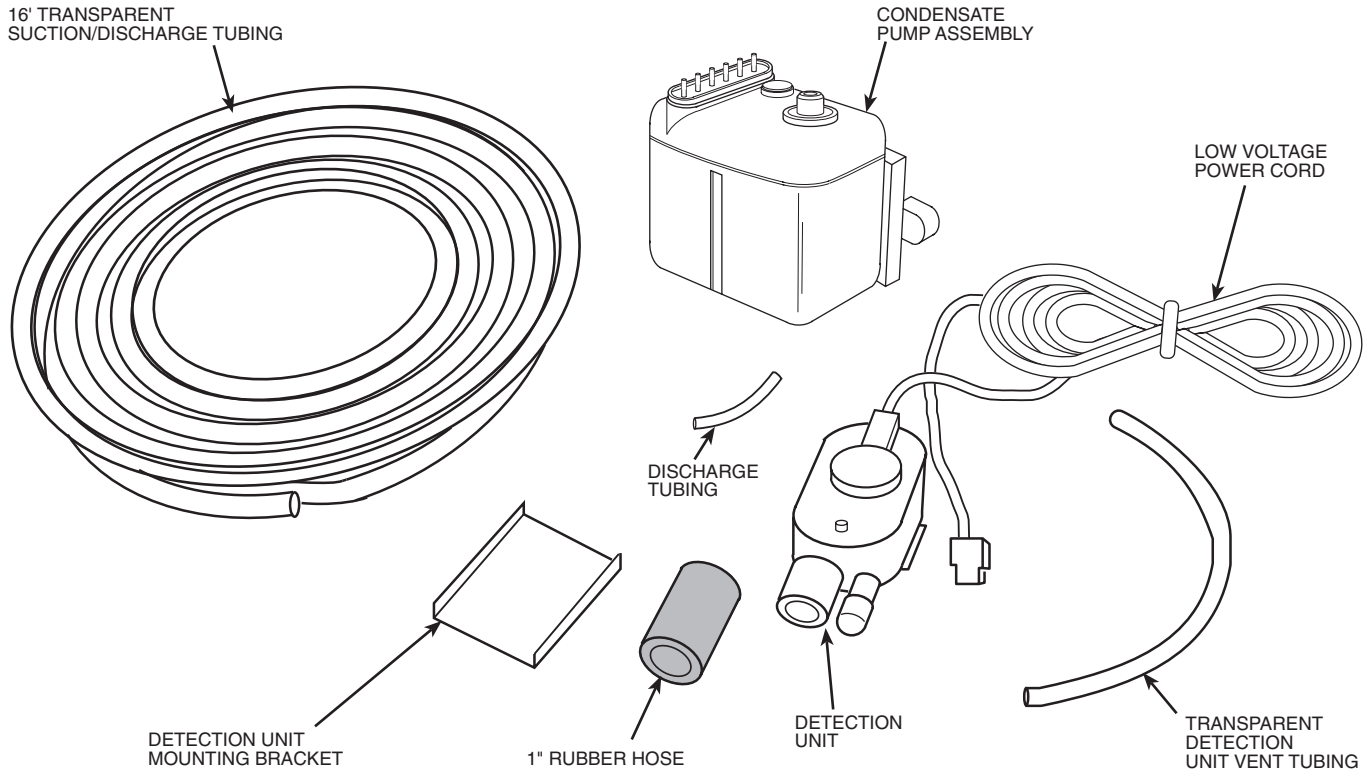


Fig. 1 — Accessory Condensate Kit Parts

Table 1 — Accessory Package Usage

ACCESSORY	BASE UNIT	WIRING FIG. NO.
53DS-900---062	40QNB009-1	4
	40QNE009-1	7
	40QNB012-1	4
	619EAX0090E0	4
	619EAX0120E0	4
	619EAX0090EW0	7
53DS-900---064	40QNB012-3	5
	40QNB018-3	6
	40QNB024-3	6
	40QNH012-3	8
	40QNH018-3	9
	40QNH024-3	9
	40BNB018-3	10
	40BNB024-3	10
	40BNE018-3	10
	40BNE024-3	10
	619ENX0120E0	5
	619ENX0180E0	6
	619ENX0240E0	6
	619ENX0120H0	8
	619ENX0180H0	9
	619ENX0240H0	9
53DS-900---084	40BNB030	10
	40BNB036	10
	40BNE030	10
	40BNE036	10

Table 2 — Accessory Condensate Pump Kit Contents

ITEM	QTY
Condensate Pump Assembly	1
Detection Unit	1
Detection Unit Mounting Bracket	1
Transparent Detection Unit Vent Tubing	1
1-in. Rubber Hose	1
Low-Voltage Power Cord	1
16-ft Transparent Suction/Discharge Tubing	1

SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressures and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment. When working on air-conditioning equipment, observe all precautions in the literature, tags, and labels attached to the unit, and other safety precautions that may apply.

⚠ WARNING

Before performing installation, service, or maintenance operations on unit, turn off the main power switch. Electrical shock could cause personal injury.

INSTALLATION

NOTE: To make installation easier, install the detection unit assembly before installing the fan coil unit.

1. Unpack the contents of the condensate pump accessory package. Attach the 1-in. hose and transparent vent tubing to the detection unit (see Fig. 1 and 2). Slide the mounting bracket onto the bottom of the detection unit. Uncoil the low voltage power cord.
2. Remove the fan coil mounting bracket from the back of the unit. Connect the detection unit with the 1 in. hose, to the fan coil unit condensate drain line (see Fig. 2). **The detection unit *must* be installed horizontally for proper operation of the float switch. It is recommended that the mounting bracket be cemented to inside of the unit located adjacent to the fan coil drain as depicted on Fig. 2.** Attach one end of the transparent tubing to the detection unit. Connect one end of the low voltage power cord to the telephone jack on the detection unit and route the cord and transparent tubing through the knockout on the side of the fan coil unit enclosure (see Fig 2). The detection unit must be mounted on the same plane (horizontally) as the condensate pan to properly detect condensate level.
3. Determine the mounting location of the pump assembly unit (for best operation, it is recommended that the pump assembly be mounted in a vertical position with the flow arrow on the unit pointing up [see Fig. 3]). **DO NOT EXCEED 6 FT MAXIMUM SUCTION LIFT.** Connect the other end of the low voltage power cord from the detection unit to the telephone jack on the pump assembly. For suction line connection, measure the distance between the detection unit and the pump assembly unit and cut the proper length of transparent tubing. Connect the detection unit and pump assembly.
4. Attach the remaining transparent tubing to the discharge side of the pump assembly (see Fig. 2 and 3) and cut the discharge line accordingly. Maximum vertical height of discharge is 18 feet. Be sure that the condensate is discharged to a safe location where the presence of water does not pose any safety or health hazards.
5. Depending on the indoor coil, wire the pump to either a 115-v or 208/230-v power source to provide power to the condensate pump (see Fig. 3).
6. Optional alarm contacts should be connected per specific application. Typically, normally closed (NC) contacts are used to interrupt power to equipment.

   Wire alarm contacts as shown in Fig. 4-10.
7. Test the unit. When the unit is mounted in place, the condensate pump system must be tested.
   a. Be sure the unit is installed on a level plane. Remove front cover of the unit.
   b. Slowly fill the condensate drain pan with water. Observe the pump discharge tubing to be sure that the pump is operating. If condensate is not being discharged through the discharge tubing, check to be sure that the lines are not kinked or obstructed, and installation parameters have been followed. If the optional alarm contact is wired, continue to pour water until the alarm circuit triggers (shutting down the system, etc.).

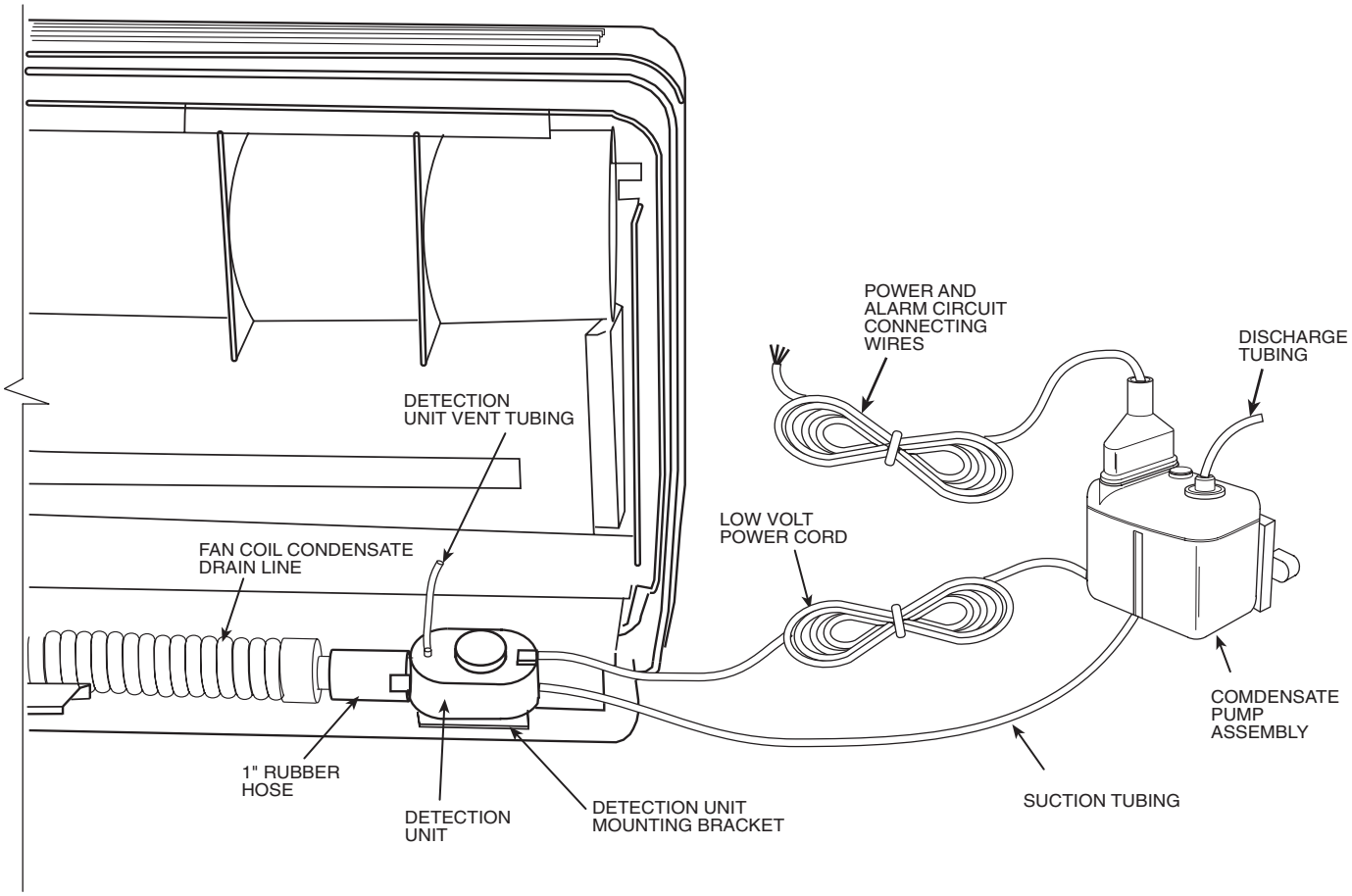


Fig. 2 — Rear of High Wall Unit with Mounted Condensate Pump

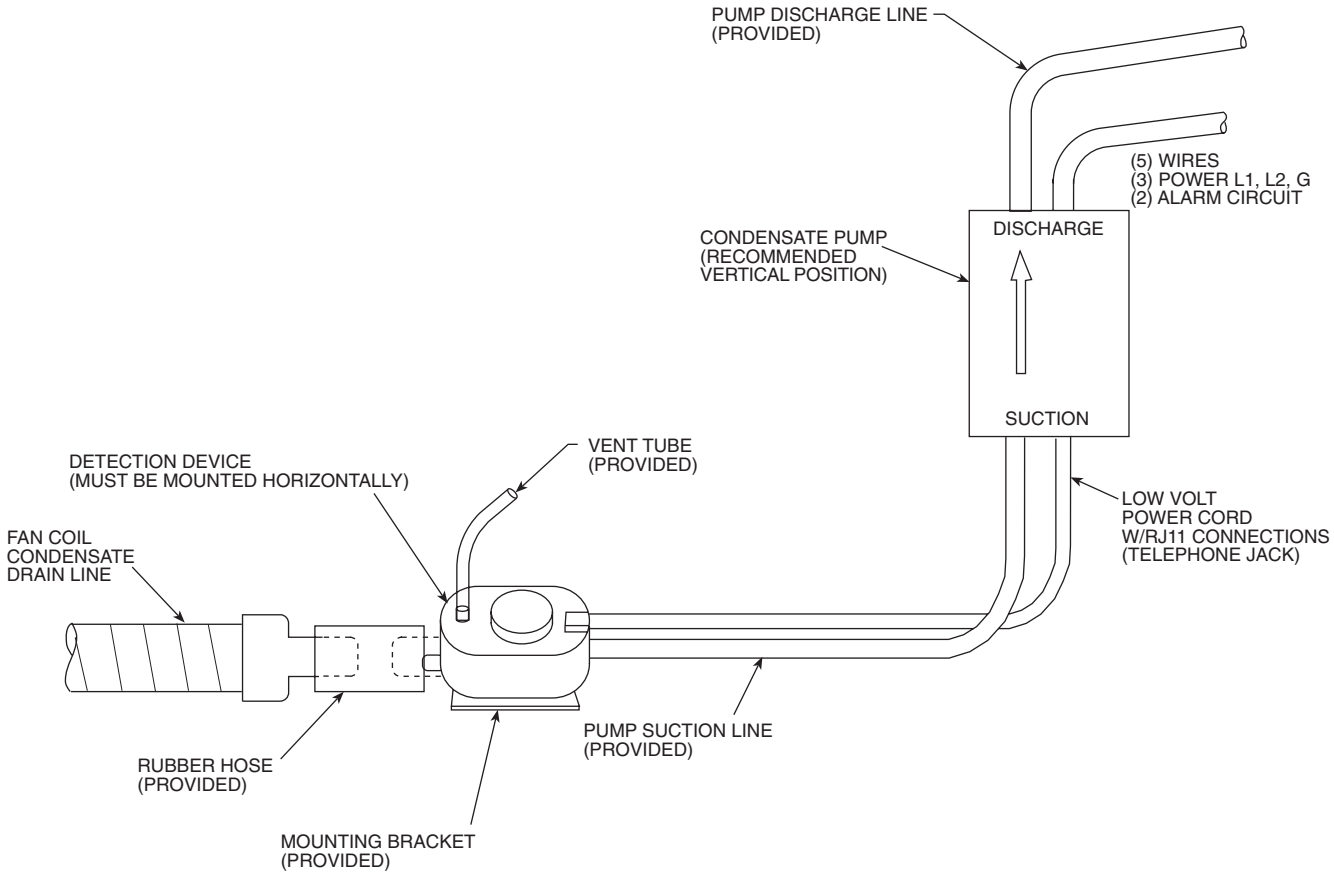
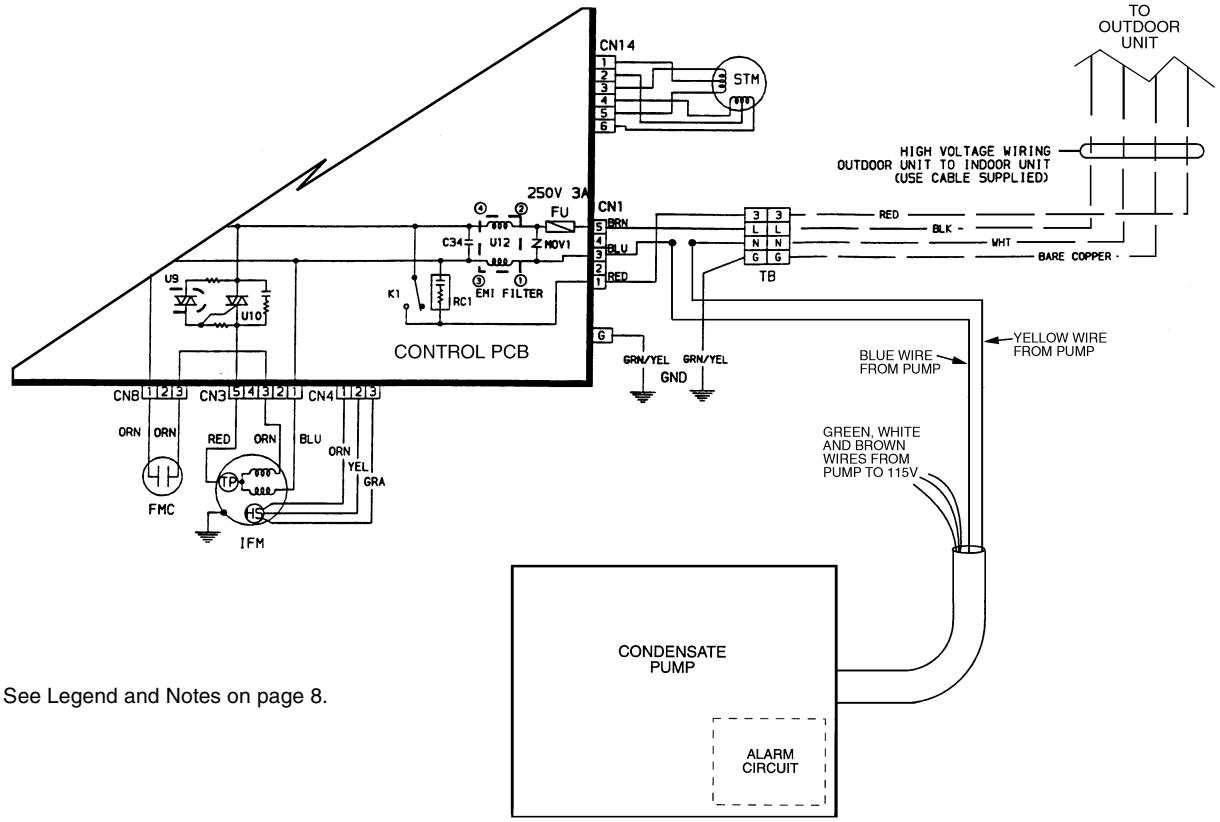
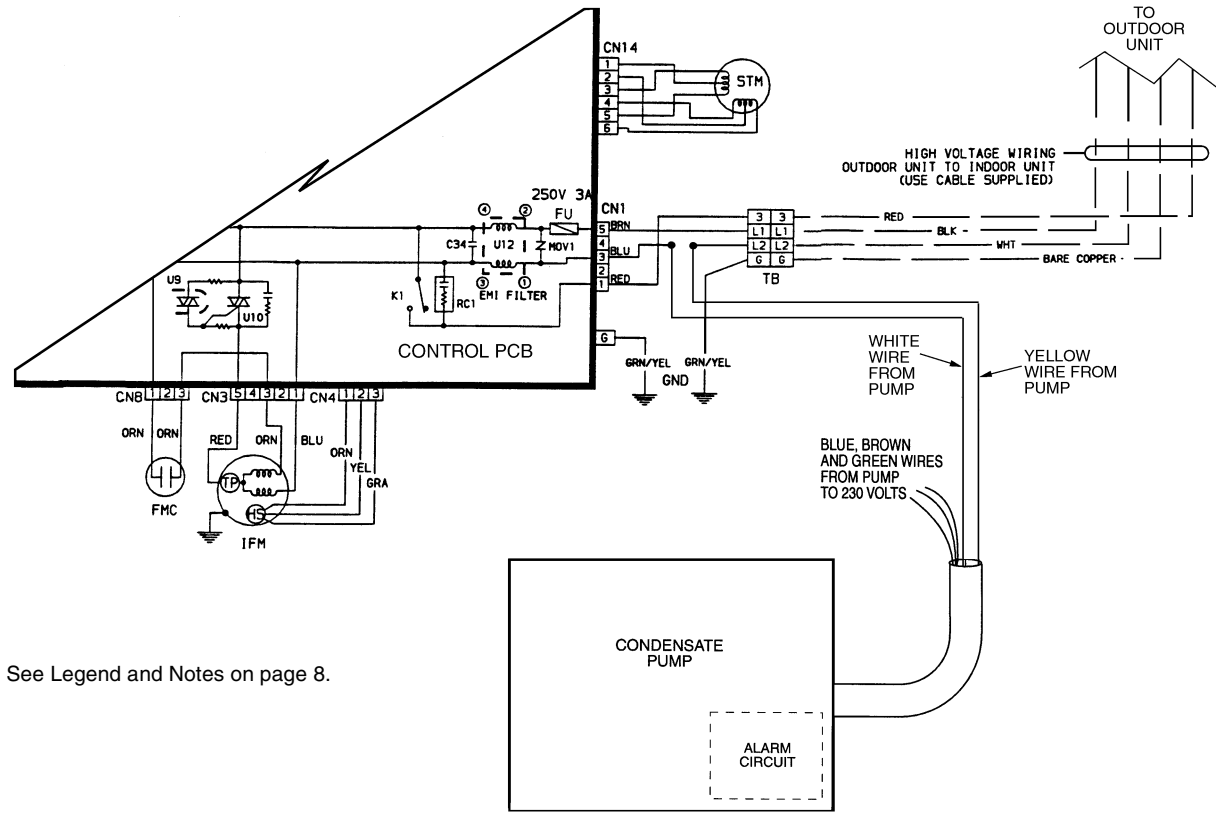


Fig. 3 — Accessory Condensate Pump Connections



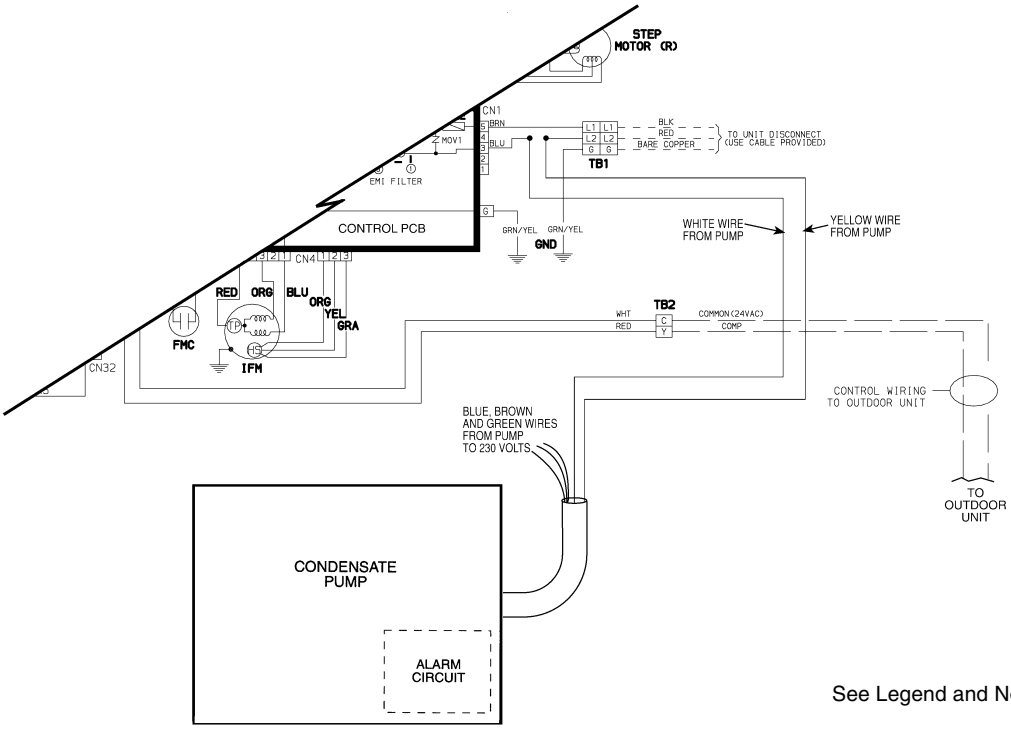
See Legend and Notes on page 8.

Fig. 4 — Cooling Only System Wiring Diagram — 9,000 and 12,000 Btuh Units, 115 V



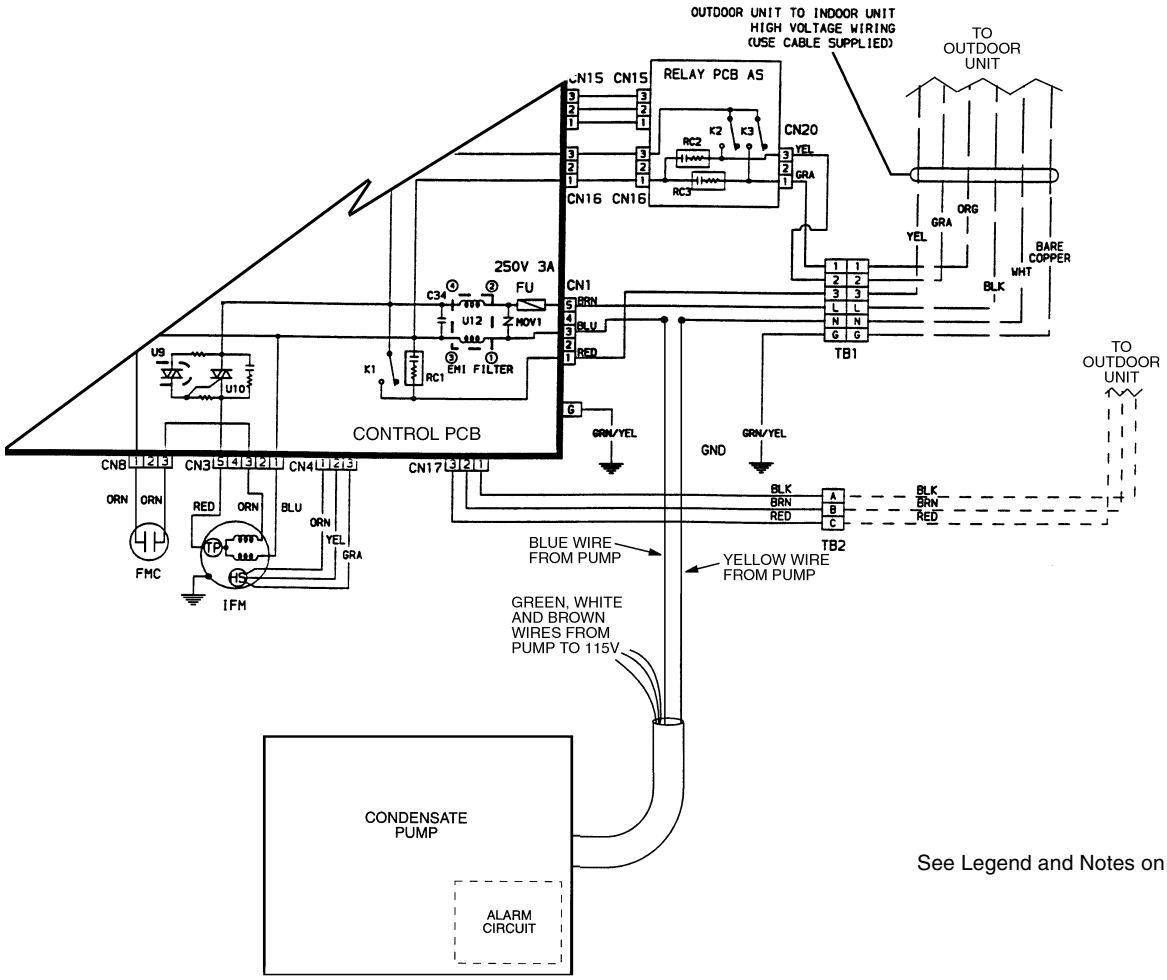
See Legend and Notes on page 8.

Fig. 5 — Cooling Only System Wiring Diagram — 12,000 Btuh Units, 208/230 V



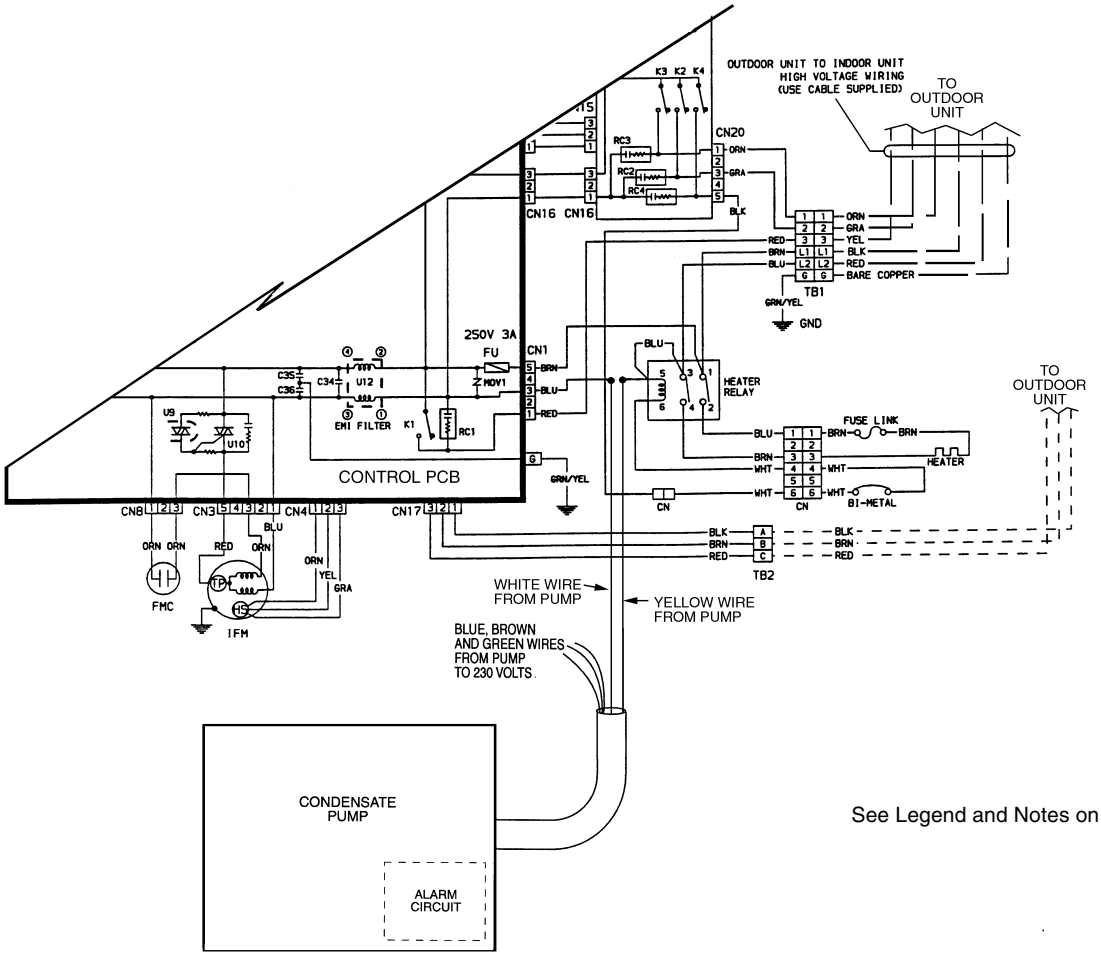
See Legend and Notes on page 8.

Fig. 6 — Cooling Only System Wiring Diagram — 18,000 and 24,000 Btuh Units, 208/230V



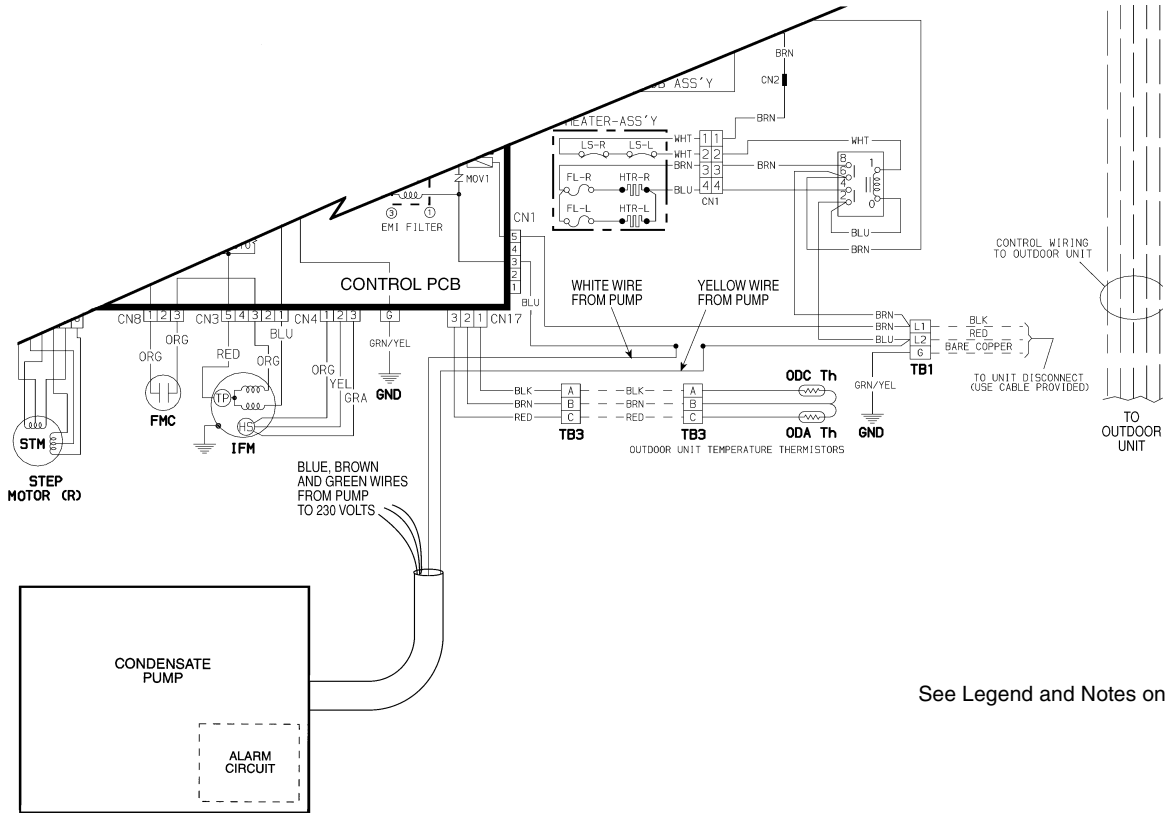
See Legend and Notes on page 8.

Fig. 7 — Heat Pump System Wiring Diagram — 9,000 Btuh Units, 115 V



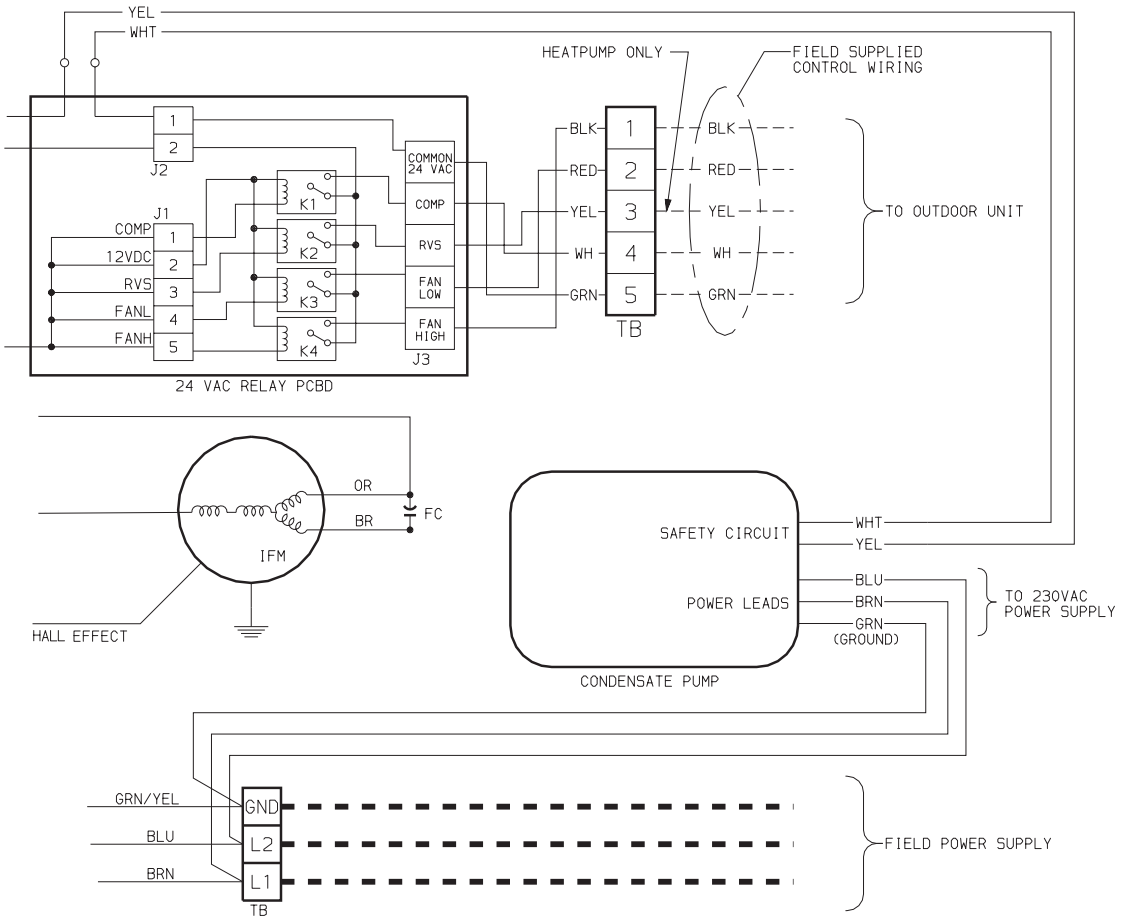
See Legend and Notes on page 8.

Fig. 8 — Heat Pump System with Electric Heat Wiring Diagram — 12,000 Btuh Units, 230 V



See Legend and Notes on page 8.

Fig. 9 — Heat Pump System with Electric Heat Wiring Diagram — 18,000 and 24,000 Btuh Units, 208/230V



See Legend and Notes on page 8.

Fig. 10 — 40BN Wiring Diagram

LEGEND AND NOTES FOR FIG. 4-10

AGING — For the Burn-in Test (short these terminals)
AS,ASS'Y — Assembly
CN — Connector
EMI — Electromagnetic Interference
FL — Fuse Link
FMC — Fan Motor Capacitor
FU — Fuse
GND — Ground
HA — Home Automation
HPS — High-Pressure Switch
HS — Hall (Rpm) Sensor
HTR — Heater
IDC Th — Indoor-Coil Temperature Thermistor
IFM — Indoor-Fan Motor
JEM-A — Japan Electric Manufacturing Industry Association
K — Relay
LS — Limit Switch
ODA Th — Outdoor-Air Thermistor
ODC Th — Outdoor-Coil Thermistor
OFM — Outdoor-Fan Motor
PCB — Printed Circuit Board
RA Th — Return Air Thermistor
RC — Resistor Capacitor
RCV — Receiver
STM — Step Motor
TB — Terminal Block
TP — Thermal Protector
TRAN — Transformer

Terminal (Marked)
Terminal (Unmarked)
Splice
Terminal (Marked)
Factory Wiring
Field Control Wiring
Field Power Wiring
Accessory or Optional Wiring

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Wire in accordance with National Electrical Code (NEC) and local codes.
3. Thermistor wiring cable 35 feet long provided with unit.
4. IFM, OFM and compressor have internal thermal protectors.
5. Transformer has a 2 amp thermal fuse on the primary side.

CLEANING AND MAINTENANCE

⚠ WARNING

Disconnect all power to unit to avoid possible electrical shock during cleaning or maintenance. Set unit power switch to OFF position.

At the beginning of each season clean the detection unit and the filter.

1. Disconnect tubing and low voltage power cord from the detection unit and slide unit out of mounting bracket
2. Remove the top of the detection unit and take out filter and the float.
3. Clean the detection unit and the float using a solution of water containing 5% bleach.
4. Replace the float in its original position with the magnet side facing up.
5. Re-install filter and snap cover back into place.
6. Perform an operational test (see item 7 under installation section).

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